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10/734,160	12/15/2003	Jung-Hoe Kim	1901.1344	2075

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EXAMINER	
VO, HUYEN X	
ART UNIT	**PAPER NUMBER**
2626	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/734,160	KIM ET AL.	
	Examiner	Art Unit	
	HUYEN X. VO	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,8-13,15-30,32-34,36 and 37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,8-13,15-30,32-34,36 and 37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The finality of previous action has been withdrawn in favor of a new non-final office action in view of Park et al. (USPN 6349284).

Claim Objections

2. Claim objected to because of the following informalities:

In claim 1, line 13, “encoding and” should read – encoding of the side information and the –.

In claim 3, line 15, “encoding and” should read – encoding of the side information and the –.

In claim 6, line 14, “encoding and” should read – encoding of the side information and the –.

In claim 8, line 15, “encoding and” should read – encoding of the side information and the –.

In claim 11, line 14, “decoding and” should read – decoding of the side information and the –.

In claim 15, line 15, “decoding and” should read – decoding of the side information and the –.

In claim 16, line 14, “decoding and” should read – decoding of the side information and the –.

In claim 20, line 14, “decoding and” should read – decoding of the side information and the –.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3-6, 8-13, 15-28, 20-21, 23-26, 28-30, 32-34, and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sluijter et al. (USPN 6772114) in view of Park et al. (USPN 6349284).

5. Regarding claims 1 and 6, Sluijter et al. disclose a method of encoding digital data the method comprising:

bandwidth-extension-encoding the digital data (*input signal in figure 1*), outputting bandwidth-limited data (*splitter 7 in figure 1 divides the digital data into low-band and high-band data*), and generating bandwidth extension information (*output of splitter 7; high-band data*), wherein the bandwidth-extension-encoding includes receiving the digital data (*figures 1-2*) and slicing off a portion of the digital data in a high frequency band with a remaining portion of the digital data being the bandwidth-limited data (*figures 1-2; signal is divided into low-frequency band and high-frequency band*), and

wherein the bandwidth extension information is information necessary for restoring the sliced portion of the digital data (*figures 1-2; information of the high-frequency band is transmitted to the receiver for later used to reconstruct high-frequency band*); and

multiplexing the encoded bandwidth-limited data and the bandwidth extension information (*output of figure 2 and/or col. 6, lines 20-43*).

Sluijter et al. fail to specifically disclose encoding the bandwidth-limited data into a hierarchical structure having a base layer and at least one enhancement layer wherein the encoding comprises, encoding side information corresponding to the base layer, bit-sliced-encoding a plurality of quantization samples corresponding to the base layer, and repeating the encoding and bit-slice-encoding for a next enhancement layer until a plurality of predetermined layers are completely encoded. However, Park et al. teach encoding the bandwidth-limited data into a hierarchical structure having a base layer and at least one enhancement layer (*figure 3 and/or col. 6, lines 20-43*) wherein the encoding comprises, encoding side information corresponding to the base layer (*figure 3 and/or col. 6, lines 20-43*), bit-sliced-encoding a plurality of quantization samples corresponding to the base layer (*figure 3 and/or col. 6, lines 20-43*), and repeating the encoding and bit-slice-encoding for a next enhancement layer until a plurality of predetermined layers are completely encoded (*figure 3 and/or col. 6, lines 20-43*).

Since Sluijter et al. and Park et al. are analogous in the art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in

the art at the time of invention to modify Sluijter et al. by substituting its encoder with encoder of Park et al. to yield predictable coded results.

6. Regarding claims 3 and 8, Park et al. disclose a method of encoding digital data the method comprising:

bandwidth-extension-encoding the digital data (*input signal in figure 1*), outputting bandwidth-limited data (*splitter 7 in figure 1 divides the digital data into low-band and high-band data*), and generating bandwidth extension information (*output of splitter 7; high-band data*), wherein the bandwidth-extension-encoding includes receiving the digital data (*figures 1-2*) and slicing off a portion of the digital data in a high frequency band with a remaining portion of the digital data being the bandwidth-limited data (*figures 1-2; signal is divided into low-frequency band and high-frequency band*), and wherein the bandwidth extension information is information necessary for restoring the sliced portion of the digital data (*figures 1-2; information of the high-frequency band is transmitted to the receiver for later used to reconstruct high-frequency band*); and

multiplexing the encoding bandwidth-limited data and the bandwidth extension information (*output of figure 2 and/or col. 6, lines 20-43*).

Sluijter et al. fail to specifically disclose encoding the bandwidth-limited data into a hierarchical structure having a base layer and at least one enhancement layer wherein the encoding comprises: encoding side information containing scale factor information and coding model information corresponding to the base layer; bit-sliced-encoding a plurality of quantization samples corresponding to the base layer with

reference to the coding model information; and repeating the encoding and bit-sliced-encoding for a next enhancement layer until a plurality of predetermined layers are completely coded. However, Park et al. teach encoding the bandwidth-limited data into a hierarchical structure having a base layer and at least one enhancement layer (*figure 3 and/or col. 6, lines 20-43*) wherein the encoding comprises: encoding side information containing scale factor information and coding model information corresponding to the base layer (*figure 3 and/or col. 6, lines 20-43*) (*figure 3 and/or col. 6, lines 20-43*); bit-sliced-encoding a plurality of quantization samples corresponding to the base layer with reference to the coding model information (*figure 3 and/or col. 6, lines 20-43*); and repeating the encoding and bit-sliced-encoding for a next enhancement layer until a plurality of predetermined layers are completely coded (*figure 3 and/or col. 6, lines 20-43*).

Since Sluijter et al. and Park et al. are analogous in the art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Sluijter et al. by substituting its encoder with encoder of Park et al. to yield predictable coded results.

7. Regarding claims 4 and 9, Sluijter et al. fail to specifically disclose wherein the encoded bandwidth-limited data and the bandwidth extension information is multiplexed in such an order that a portion of the encoded bandwidth-limited data corresponding to the base layer is located, the bandwidth extension information is located, and portions of the bandwidth-limited data corresponding to the remaining enhancement layers are

located. However, Park et al. teach wherein the encoded bandwidth-limited data and the bandwidth extension information is multiplexed in such an order that a portion of the encoded bandwidth-limited data corresponding to the base layer is located, the bandwidth extension information is located, and portions of the bandwidth-limited data corresponding to the remaining enhancement layers are located (*figure 3*).

Since Sluijter et al. and Park et al. are analogous in the art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Sluijter et al. by incorporating the teaching of Park et al. in order to enable the decoder to properly recover the data to reconstruct the audio signal.

8. Regarding claims 5 and 10, Sluijter et al. fail to specifically disclose wherein the encoded bandwidth-limited data and the bandwidth extension information is multiplexed in such an order that the bandwidth extension information is located, a portion of the encoded bandwidth-limited data corresponding to the base layer is located, and portions of the bandwidth-limited data corresponding to the remaining enhancement layers are located. However, Park et al. teach wherein the encoded bandwidth-limited data and the bandwidth extension information is multiplexed in such an order that the bandwidth extension information is located, a portion of the encoded bandwidth-limited data corresponding to the base layer is located, and portions of the bandwidth-limited data corresponding to the remaining enhancement layers are located (*figure 3*).

Since Sluijter et al. and Park et al. are analogous in the art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Sluijter et al. by incorporating the teaching of Park et al. in order to enable the decoder to properly recover the data to reconstruct the audio signal.

9. Regarding claims 11-13, 15-18, and 20, Sluijter et al. disclose a decoding method/apparatus (*receiver 5 in figure 1*). Park et al. also teach a decoding method/apparatus (*figure 4*). Since decoding operation is merely a reverse or complimentary operation of the encoding method/apparatus, it would have been obvious to one of ordinary skill in the art at the time of invention to readily modify the decoder of Sluijter et al. and Parker et al. to decode the encoded signal.

10. Regarding claims 21 and 26, Sluijter et al. disclose an apparatus for encoding digital data, the apparatus comprising:

a bandwidth extension encoder that bandwidth-extension-encodes the digital data (*input signal in figure 1*), outputs bandwidth-limited data, and generates bandwidth extension information (*splitter 7 in figure 1 divides the digital data into low-band and high-band data*), wherein the bandwidth-extension-encoding includes receiving the digital data (*figures 1-2*) and slicing off a portion of the digital data in a high frequency band with rhea remaining portion of the digital data being the bandwidth-limited data (*figures 1-2; signal is divided into low-frequency band and high-frequency band*), and

wherein the bandwidth extension information is information necessary for restoring the sliced portion of the digital data (*figures 1-2; information of the high-frequency band is transmitted to the receiver for later used to reconstruct high-frequency band*); and

a multiplexer that multiplexes the encoded bandwidth-limited data and the bandwidth extension information (*output of figure 2 and/or col. 6, lines 20-43*).

Sluijter et al. fail to specifically disclose a fine grain scalability encoder that encodes the bandwidth-limited data into a hierarchical structure having a base layer and at least one enhancement layer wherein the fine grain scalability encoder encodes side information corresponding to the base layer, bit-sliced-encodes a plurality of quantization samples corresponding to the base layer, and encodes side information and bit-sliced-encodes a plurality of quantization samples corresponding to a next enhancement layer until a plurality of predetermined layers are completely encoded. However, Park et al. teach a fine grain scalability encoder that encodes the bandwidth-limited data into a hierarchical structure having a base layer and at least one enhancement layer (*figure 3 and/or col. 6, lines 20-43*) wherein the fine grain scalability encoder encodes side information corresponding to the base layer (*figure 3 and/or col. 6, lines 20-43*), bit-sliced-encodes a plurality of quantization samples corresponding to the base layer (*figure 3 and/or col. 6, lines 20-43*), and encodes side information and bit-sliced-encodes a plurality of quantization samples corresponding to a next enhancement layer until a plurality of predetermined layers are completely encoded (*figure 3 and/or col. 6, lines 20-43*).

Since Sluijter et al. and Park et al. are analogous in the art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Sluijter et al. by substituting its encoder with encoder of Park et al. to yield predictable coded results.

11. Regarding claims 23 and 28, Sluijter et al. disclose an apparatus for encoding digital data, the apparatus comprising:

a bandwidth extension encoder that bandwidth-extension-encodes the digital data (*input signal in figure 1*), outputs bandwidth-limited data, and generates bandwidth extension information (*splitter 7 in figure 1 divides the digital data into low-band and high-band data*), wherein the bandwidth-extension-encoding includes receiving the digital data (*figures 1-2*) and slicing off a portion of the digital data in a high frequency band with the remaining portion of the digital data being the bandwidth-limited data (*figures 1-2; signal is divided into low-frequency band and high-frequency band*), and wherein the bandwidth extension information is information necessary for restoring the sliced portion of the digital data (*figures 1-2; information of the high-frequency band is transmitted to the receiver for later used to reconstruct high-frequency band*); and

a multiplexer that multiplexes the encoded bandwidth-limited data and the bandwidth extension information, wherein the digital data in the high frequency band is not included in the bandwidth extension information (*output of figure 2 and/or col. 6, lines 20-43*).

Sluijter et al. fail to specifically disclose a fine grain scalability encoder that encodes the bandwidth-limited data into a hierarchical structure having a base layer and at least one enhancement layer wherein the fine grain scalability encoder encodes side information containing scale factor information and coding model information corresponding to the base layer, bit-sliced-encodes a plurality of quantization samples corresponding to the base layer with reference to the coding model information, and encodes side information containing scale factor information and coding model information and bit-sliced-encodes a plurality of quantization samples corresponding to the next enhancement layer until plurality of predetermined layers are completely encoded. However, Park et al. teach a fine grain scalability encoder that encodes the bandwidth-limited data into a hierarchical structure having a base layer and at least one enhancement layer (*figure 3 and/or col. 6, lines 20-43*) wherein the fine grain scalability encoder encodes side information containing scale factor information and coding model information corresponding to the base layer (*figure 3 and/or col. 6, lines 20-43*), bit-sliced-encodes a plurality of quantization samples corresponding to the base layer with reference to the coding model information (*figure 3 and/or col. 6, lines 20-43*), and encodes side information containing scale factor information and coding model information (*figure 3 and/or col. 6, lines 20-43*) and bit-sliced-encodes a plurality of quantization samples corresponding to the next enhancement layer until plurality of predetermined layers are completely encoded (*figure 3 and/or col. 6, lines 20-43*); and

Since Sluijter et al. and Park et al. are analogous in the art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in

the art at the time of invention to modify Sluijter et al. by substituting its encoder with encoder of Park et al. to yield predictable coded results.

12. Regarding claims 24 and 28, Sluijter et al. fail to specifically disclose wherein the multiplexer multiplexes the encoded bandwidth-limited data and the bandwidth extension information in such an order that a portion of the encoded bandwidth-limited data corresponding to the base layer is located, the bandwidth extension information is located, and portions of the bandwidth-limited data corresponding to the remaining enhancement layers are located. However, Park et al. teach wherein the multiplexer multiplexes the encoded bandwidth-limited data and the bandwidth extension information is multiplexed in such an order that a portion of the encoded bandwidth-limited data corresponding to the base layer is located, the bandwidth extension information is located, and portions of the bandwidth-limited data corresponding to the remaining enhancement layers are located (*figure 3*).

Since Sluijter et al. and Park et al. are analogous in the art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Sluijter et al. by incorporating the teaching of Park et al. in order to enable the decoder to properly recover the data to reconstruct the audio signal.

13. Regarding claims 25 and 29, Sluijter et al. fail to specifically disclose wherein the multiplexer multiplexes the encoded bandwidth-limited data and the bandwidth

extension information is multiplexed in such an order that the bandwidth extension information is located, a portion of the encoded bandwidth-limited data corresponding to the base layer is located, and portions of the bandwidth-limited data corresponding to the remaining enhancement layers are located. However, Park et al. teach wherein the multiplexer multiplexes the encoded bandwidth-limited data and the bandwidth extension information is multiplexed in such an order that the bandwidth extension information is located, a portion of the encoded bandwidth-limited data corresponding to the base layer is located, and portions of the bandwidth-limited data corresponding to the remaining enhancement layers are located (*figure 3*).

Since Sluijter et al. and Park et al. are analogous in the art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Sluijter et al. by incorporating the teaching of Park et al. in order to enable the decoder to properly recover the data to reconstruct the audio signal.

14. Regarding claims 30, 32-34, and 36-37, Sluijter et al. disclose a decoding method/apparatus (*receiver 5 in figure 1*). Park et al. also teach a decoding method/apparatus (*figure 4*). Since decoding operation is merely a reverse or complimentary operation of the encoding operation, it would have been obvious to one of ordinary skill in the art at the time of invention to readily modify the decoder of Sluijter et al. and Parker et al. to decode the encoded signal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN X. VO whose telephone number is (571)272-7631. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Wozniak can be reached on 571-272-7632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Huyen X Vo/ 10/22/2010
Primary Examiner, Art Unit 2626

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